JANUARY 1998 **HISTORICAL CLIMATOLOGY SERIES 4-7**
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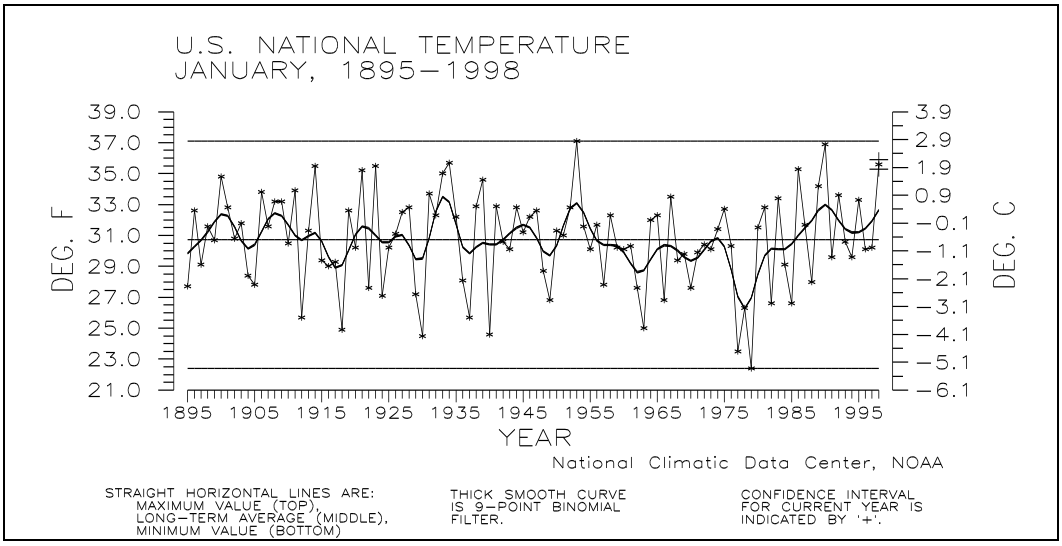
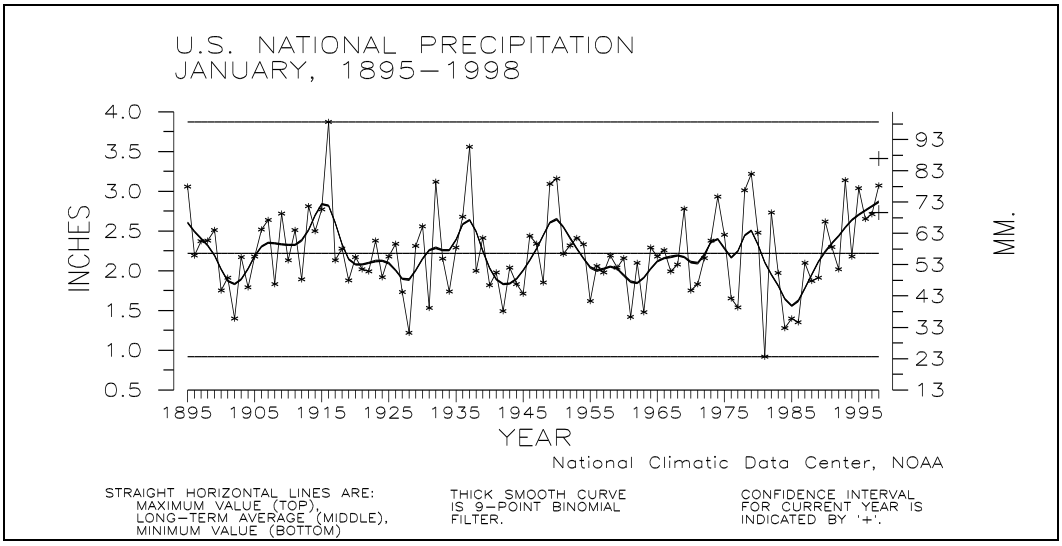
CLIMATE VARIATIONS BULLETIN





noaa NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION / NATIONAL ENVIRONMENTAL SATELLITE, DATA, AND INFORMATION SERVICE / NATIONAL CLIMATIC DATA CENTER ASHEVILLE, N.C.

This CLIMATE VARIATIONS BULLETIN (CVB) is a preliminary report that puts current monthly climate anomalies into historical perspective using climate databases archived at the National Climatic Data Center (NCDC). It is issued on a monthly basis. Supplemental sections are included which address seasonal and annual perspectives, when appropriate.

Current data are based on preliminary reports from River Forecast Center stations and First and Second Order airport stations obtained from the National Weather Service (NWS) Climate Prediction Center and preliminary tornado statistics obtained from the NWS National Severe Storms Forecast Center. THE CURRENT DATA SHOULD BE USED WITH CAUTION. These preliminary data are useful for estimating how current anomalies compare to the historical record, however the actual values and rankings for the current year will change as the final data arrive at NCDC and are processed.

The following NCDC datasets are used for the historical data: the climate division drought database (TD-9640), the hurricane datasets (TD-9636 and TD-9697), the tornado dataset (STORM DATA), and the monthly station dataset (LCD supplemental files). It should be noted that the climate division drought database consists of monthly data for 344 climate divisions in the contiguous United States. These divisional values are calculated from the 6000+ station Cooperative Observer network.

If you are a climate researcher and would like to order copies of the historical datasets used to make graphs of the type in this report, call 704-271-4994 or fax a letter to 704-271-4876 or mail a letter to the address given below, ATTN: Research User Services.

All other questions or requests for data should be made by calling 704-271-4800 or sending a fax to 704-271-4876 or by writing to:

National Climatic Data Center, NOAA
Federal Building
151 Patton Avenue, Room 120
Asheville, NC 28801-5001

If you use any of the information from this CVB, please identify "National Climatic Data Center, NOAA" as the source.

UNITED STATES JANUARY CLIMATE IN HISTORICAL PERSPECTIVE

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TABLE 1. PRECIPITATION AND TEMPERATURE RANKS, BASED ON THE PERIOD 1895-1998. 1 = DRIEST/COLDEST, 104 = WETTEST/WARMEST FOR JANUARY 1998, 103 = WETTEST/WARMEST FOR DEC 1997-JAN 1998, 103 = WETTEST/WARMEST FOR AUG 1997-JAN 1998, 103 = WETTEST/WARMEST FOR FEB 1997-JAN 1998.

REGION	JAN 1998	DEC 1997-JAN 1998	AUG 1997-JAN 1998	FEB 1997-JAN 1998
PRECIPITATION:				
NORTHEAST	89	49	35	25
EAST NORTH CENTRAL	78	30	12	20
CENTRAL	62	35	15	44
SOUTHEAST	98	99	79	82
WEST NORTH CENTRAL	83	67	51	66
SOUTH	99	100	72	96
SOUTHWEST	20	31	52	60
NORTHWEST	74	37	52	70
WEST	90	74	88	48
NATIONAL	97	84	56	74
TEMPERATURE:				
NORTHEAST	96	93	67	55
EAST NORTH CENTRAL	96	100	89	76
CENTRAL	99	87	63	47
SOUTHEAST	81	62	41	45
WEST NORTH CENTRAL	74	90	96	83
SOUTH	92	73	50	32
SOUTHWEST	92	66	75	84
NORTHWEST	98	86	95	95
WEST	101	80	93	101
NATIONAL	101	96	90	79

TABLE 2. EXTREMES, 1961-90 NORMALS, AND 1998 VALUES FOR JANUARY. IT SHOULD BE NOTED THAT THE 1998 VALUES WILL CHANGE WHEN THE FINAL DATA ARE PROCESSED.

PRECIPITATION (INCHES)

REGION	DRIEST VALUE	DRIEST YEAR	WETTEST VALUE	WETTEST YEAR	NORMAL PCPN	1998 PCPN
NORTHEAST	.87	1981	7.22	1979	2.84	4.05
EAST NORTH CENTRAL	.32	1961	2.47	1916	1.11	1.37
CENTRAL	.72	1981	9.61	1937	2.52	3.30
SOUTHEAST	.92	1927	7.73	1936	4.13	6.36
WEST NORTH CENTRAL	.16	1961	1.25	1949	.61	.83
SOUTH	.53	1914	5.34	1932	2.09	3.87
SOUTHWEST	.20	1924	3.00	1916	.82	.45
NORTHWEST	.43	1985	7.81	1953	3.80	4.53
WEST	.28	1984	10.67	1916	2.58	5.11
NATIONAL	.92	1981	3.87	1916	2.07	3.07*

* PRELIMINARY VALUE, CONFIDENCE INTERVAL + OR - .34 INCHES

TEMPERATURE (DEGREES F)

REGION	COLDEST VALUE	COLDEST YEAR	WARMEST VALUE	WARMEST YEAR	NORMAL TEMP	1998 TEMP
NORTHEAST	12.3	1918	33.8	1932	21.1	29.1
EAST NORTH CENTRAL	-1.3	1912	25.4	1990	13.0	21.4
CENTRAL	15.1	1977	40.0	1933	28.2	37.1
SOUTHEAST	35.0	1977	57.7	1950	44.1	49.2
WEST NORTH CENTRAL	.1	1937	26.6	1986	16.5	20.4
SOUTH	31.1	1940	50.7	1923	40.7	46.6
SOUTHWEST	20.8	1937	38.2	1986	31.2	35.2
NORTHWEST	13.4	1949	37.4	1953	28.5	33.7
WEST	24.4	1937	45.5	1986	38.4	42.5
NATIONAL	22.4	1979	37.1	1953	29.9	35.6*

* PRELIMINARY VALUE, CONFIDENCE INTERVAL + OR - .3 DEG. F.

TABLE 3.

STATISTICS FOR SELECTED RIVER BASINS: PRECIPITATION RANKING FOR OCT-JAN 1997-98, WHERE RANK OF 1 = DRIEST, 103 = WETTEST, BASED ON THE PERIOD 1895 TO 1998, AREAL PERCENT OF THE BASIN EXPERIENCING SEVERE OR EXTREME LONG-TERM (PALMER) DROUGHT, AND AREAL PERCENT OF THE BASIN EXPERIENCING SEVERE OR EXTREME LONG-TERM (PALMER) WET CONDITIONS, AS OF JANUARY 1998. RIVER BASIN REGIONS AS DEFINED BY THE U.S. WATER RESOURCES COUNCIL.

RIVER BASIN	PRECIPITATION RANK	% AREA DRY	% AREA WET
MISSOURI BASIN	81	.0%	36.6%
PACIFIC NORTHWEST BASIN	42	.0%	17.4%
CALIFORNIA RIVER BASIN	86	.0%	37.3%
GREAT BASIN	27	.0%	.0%
UPPER COLORADO BASIN	8	.0%	6.6%
LOWER COLORADO BASIN	44	14.1%	.0%
RIO GRANDE BASIN	55	.0%	.0%
ARKANSAS-WHITE-RED BASIN	84	.0%	35.4%
TEXAS GULF COAST BASIN	83	.0%	29.7%
SOURIS-RED-RAINY BASIN	32	11.5%	.0%
UPPER MISSISSIPPI BASIN	31	.0%	.0%
LOWER MISSISSIPPI BASIN	65	.0%	.0%
GREAT LAKES BASIN	22	20.8%	15.2%
OHIO RIVER BASIN	17	2.5%	.0%
TENNESSEE RIVER BASIN	39	.0%	.0%
NEW ENGLAND BASIN	18	1.2%	7.7%
MID-ATLANTIC BASIN	70	3.0%	2.6%
SOUTH ATLANTIC-GULF BASIN	100	.0%	28.1%

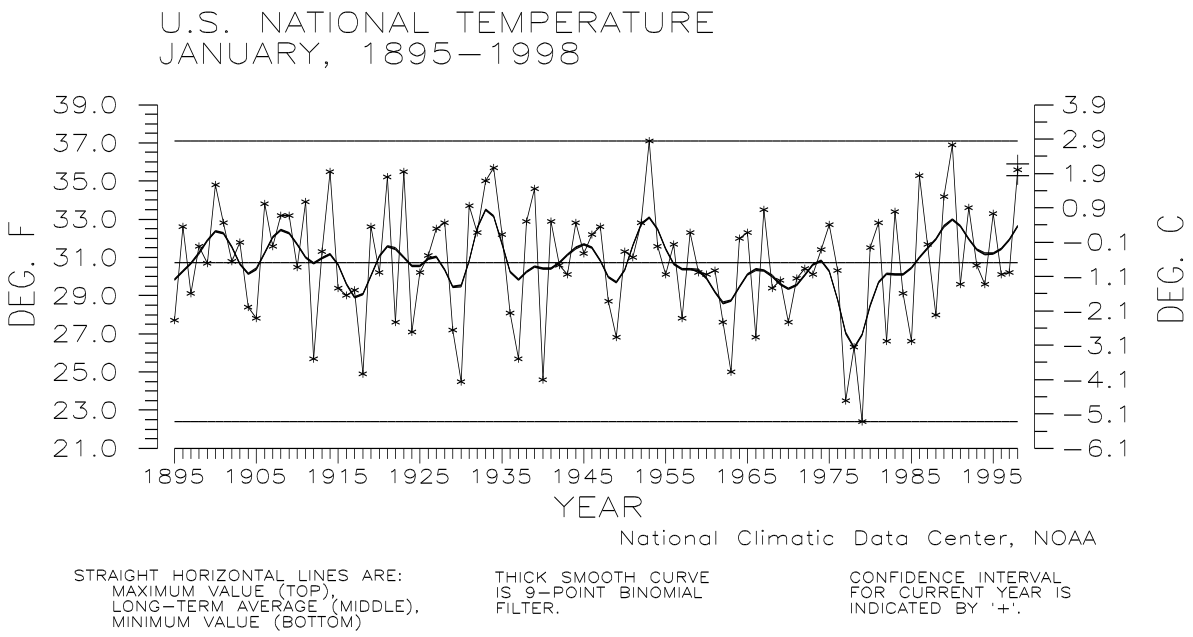


Figure 1: Preliminary data for January 1998 indicate that temperature averaged across the contiguous United States was much above the long-term mean ranking as the fourth warmest January since 1895. Nearly 30% of the country was much warmer than normal while none of the country was much cooler than normal.

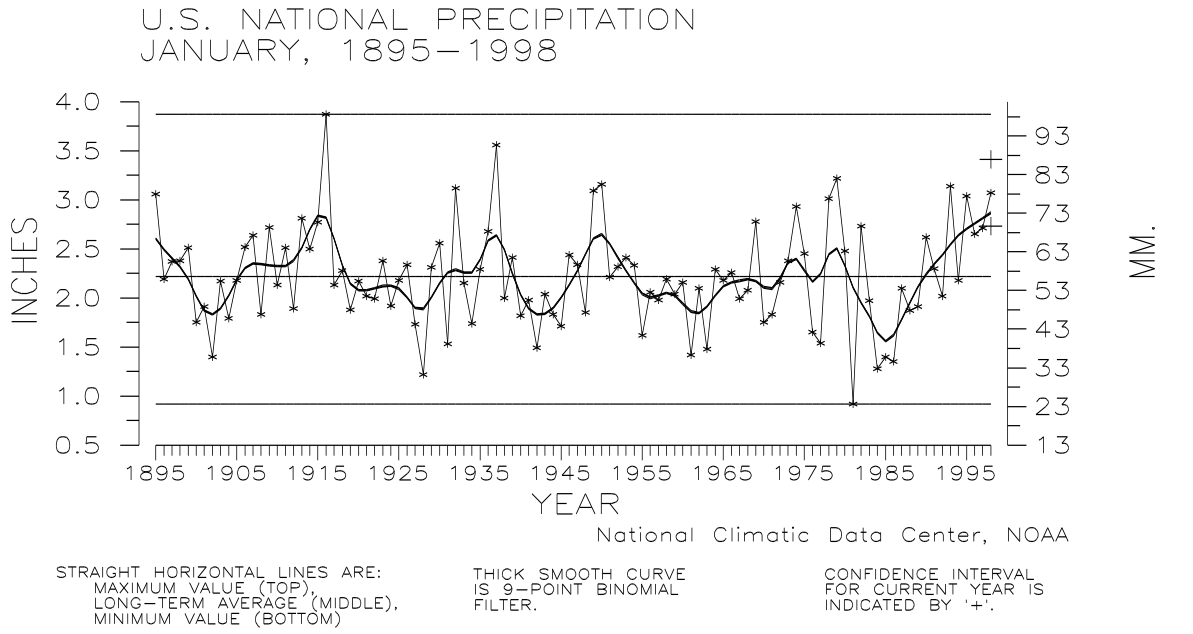


Figure 2: Preliminary precipitation data indicate that January 1998 was the eighth wettest such month, for the nation overall, since 1895. Over 21% of the country experienced much wetter than normal conditions while about five percent of the country was much drier than normal. January 1998 was the fourth consecutive such month with much above normal national precipitation values.

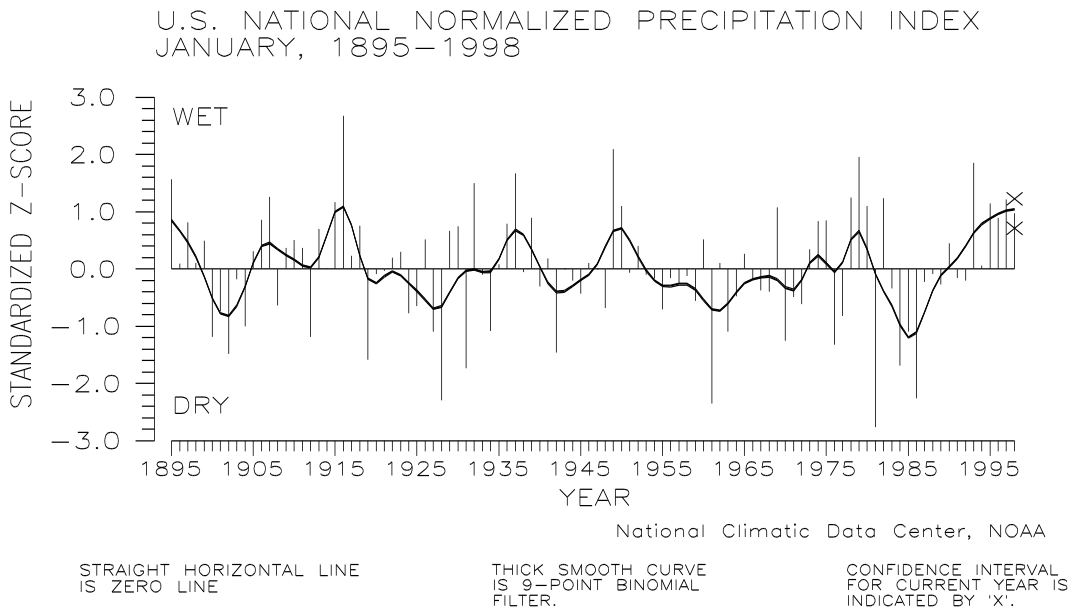


Figure 3: The preliminary national standardized precipitation index ranked January 1998 as the eighth wettest such month on record. This standardized z-score is estimated to be accurate to within 0.256 index units and its confidence interval is shown as an 'X'.

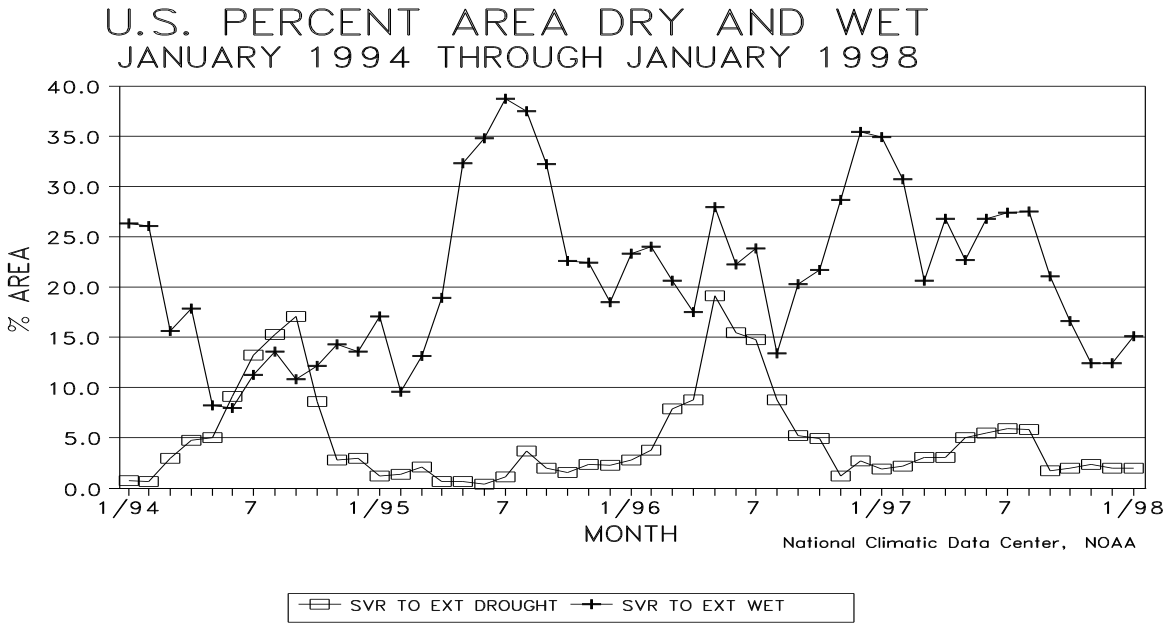


Figure 4: Long-term drought coverage (as measured by the Palmer Drought Index) remained nearly steady during January 1998 with two percent of the country experiencing severe to extreme drought and fifteen percent of the country experiencing severe to extreme wetness by the end of the month. Core wet areas included the Pacific Coastal Areas, and portions of the southern Plains, the Southeast, and western New England. Core dry areas included areas in the western and upper Great Lakes, portions of the Southwest, the lower Ohio Valley, and eastern Maryland.

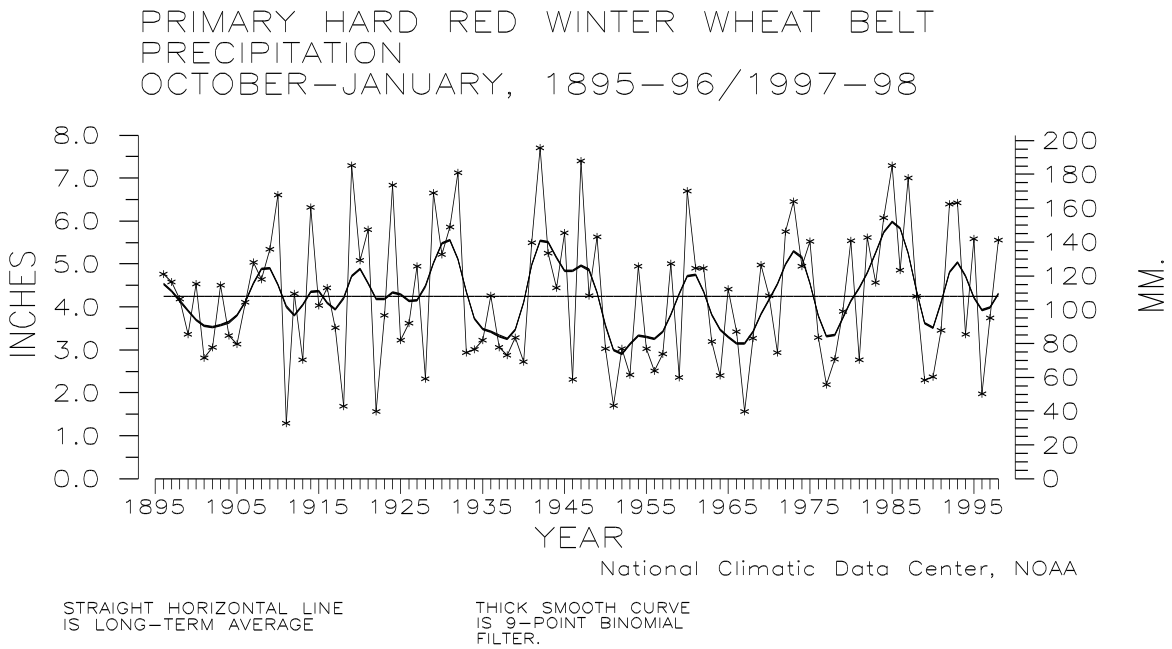


Figure 5: Total precipitation during the first four months of the growing season for the Primary Hard Red Winter Wheat Belt averaged above normal. This region includes the panhandle and extreme southern Nebraska, northeastern Colorado, all of Kansas except the extreme southeast, the western half of Oklahoma, and the Texas panhandle.

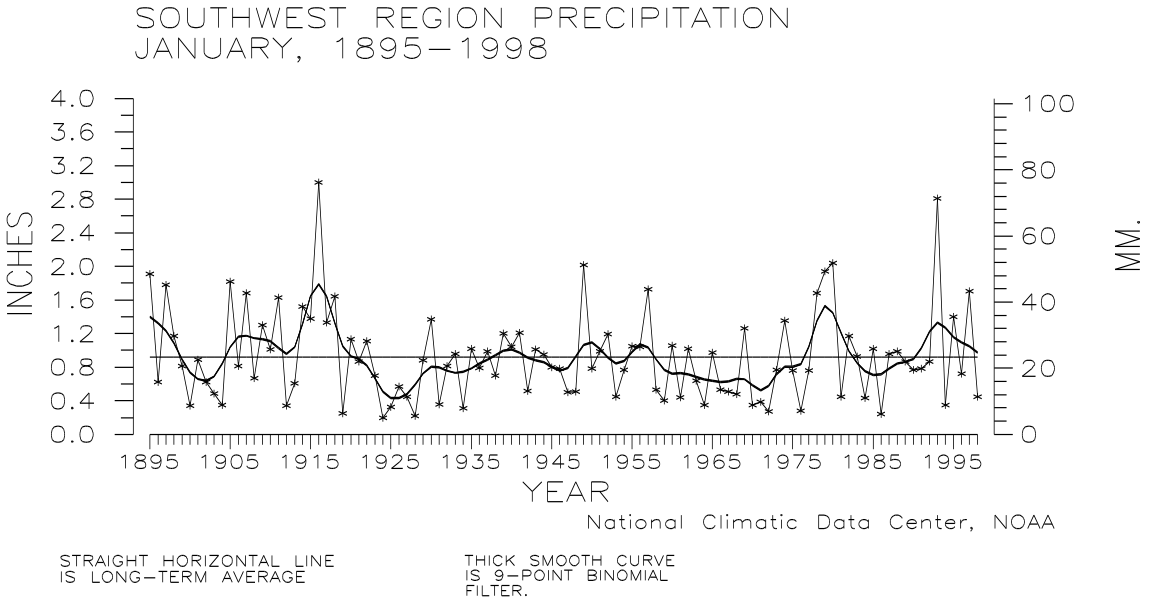


Figure 6: Preliminary precipitation data indicate that January 1998 was the 20th driest such month for the Southwest region since 1895. The Southwest region includes Arizona, Colorado, New Mexico, and Utah.

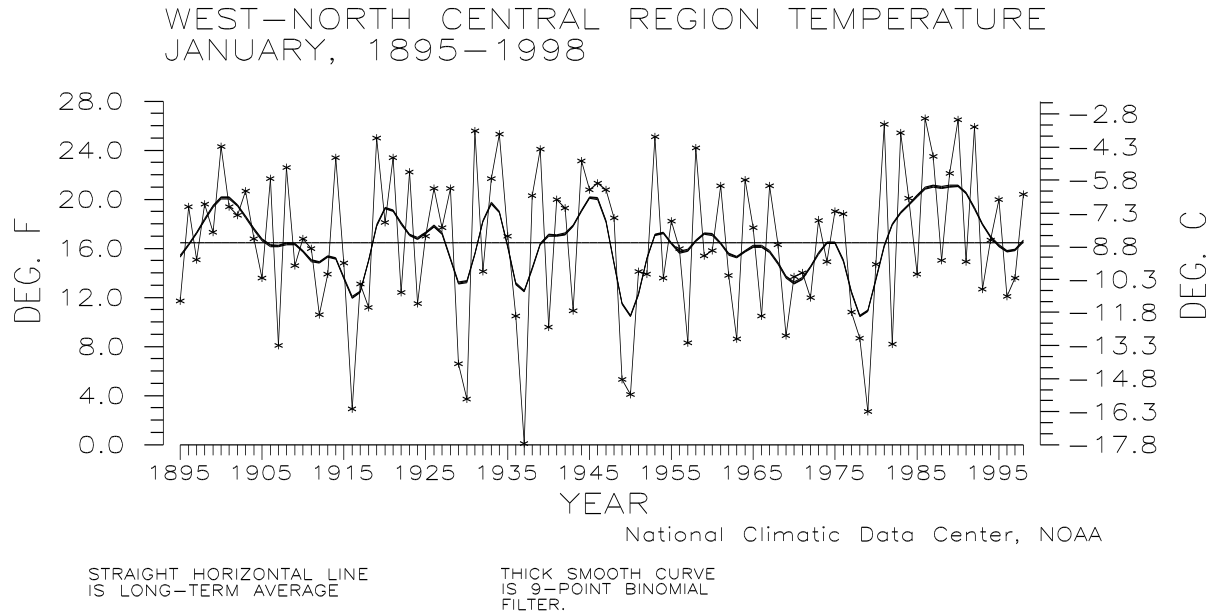


Figure 7: Preliminary data indicate that January 1998 was the 31st warmest such month since records began for the West-North Central region. Nine of the last seventeen such months have been above- to much-above the long-term mean. The West-North Central region includes Montana, Nebraska, North Dakota, South Dakota, and Wyoming.

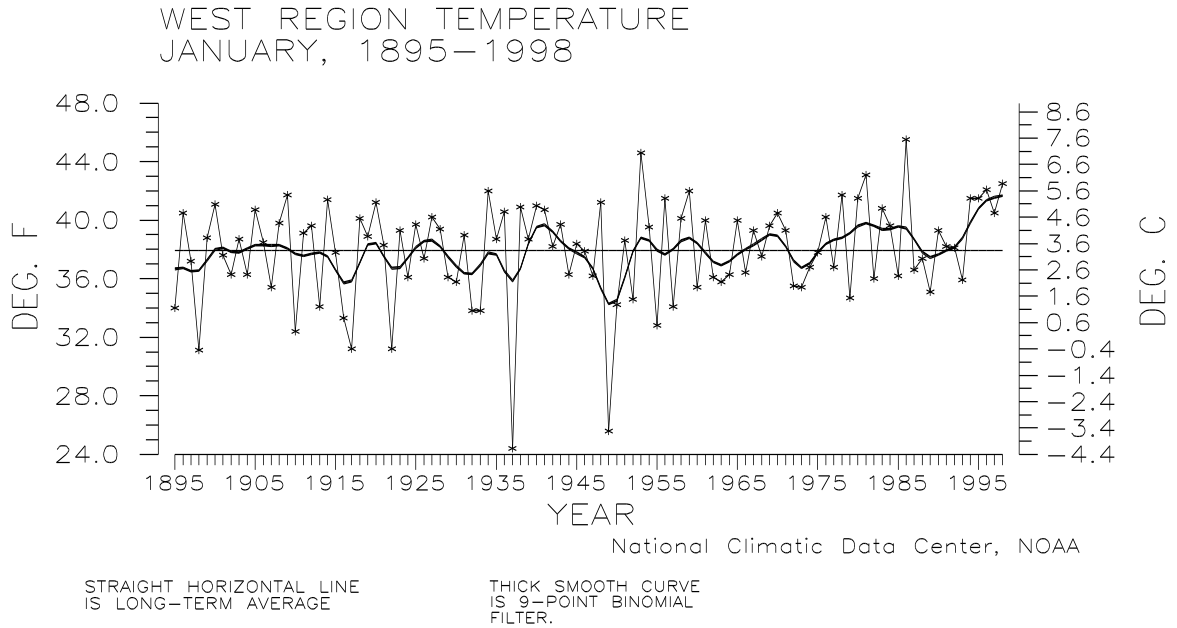


Figure 8: Based on preliminary data, January 1998 was the fourth warmest such month since 1895 for the West Region. January 1998 made five consecutive such months of much-above normal temperatures. The West Region includes California and Nevada.

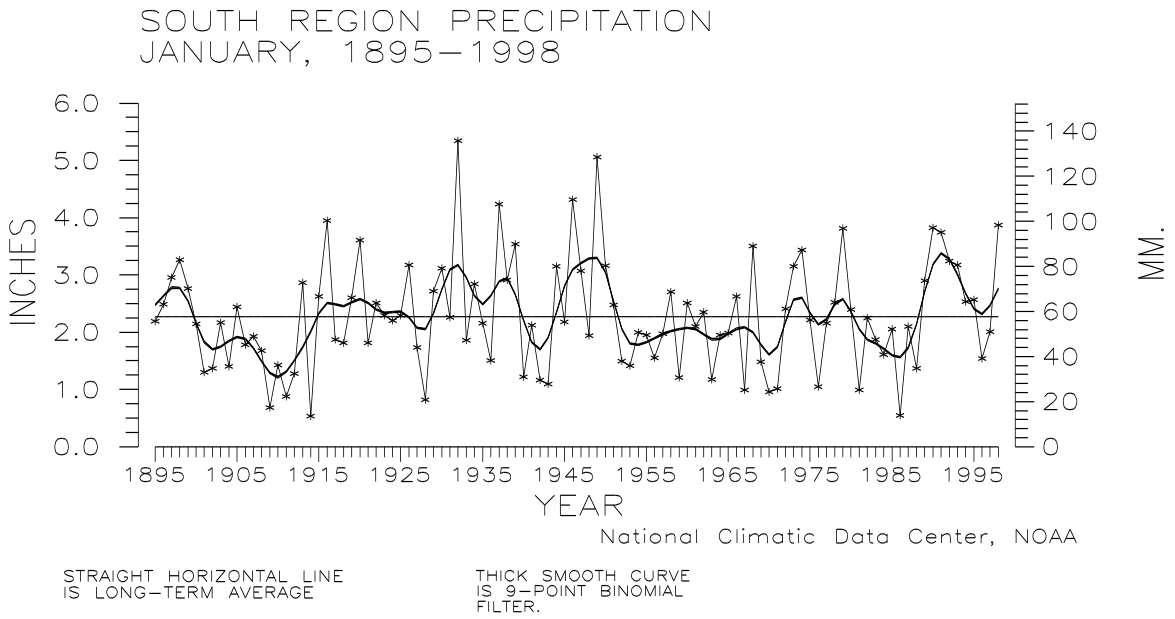


Figure 9: Based on preliminary data, January 1998 was the sixth wettest such month since 1895 for the South Region. An active southerly storm track allowed Pacific storms to move abnormally far south and regenerate along the Texas Gulf Coast. This signature of El Nino provided copious rainfall for Louisiana, east Texas, Mississippi, Arkansas, and Oklahoma, while west Texas remained near normal.

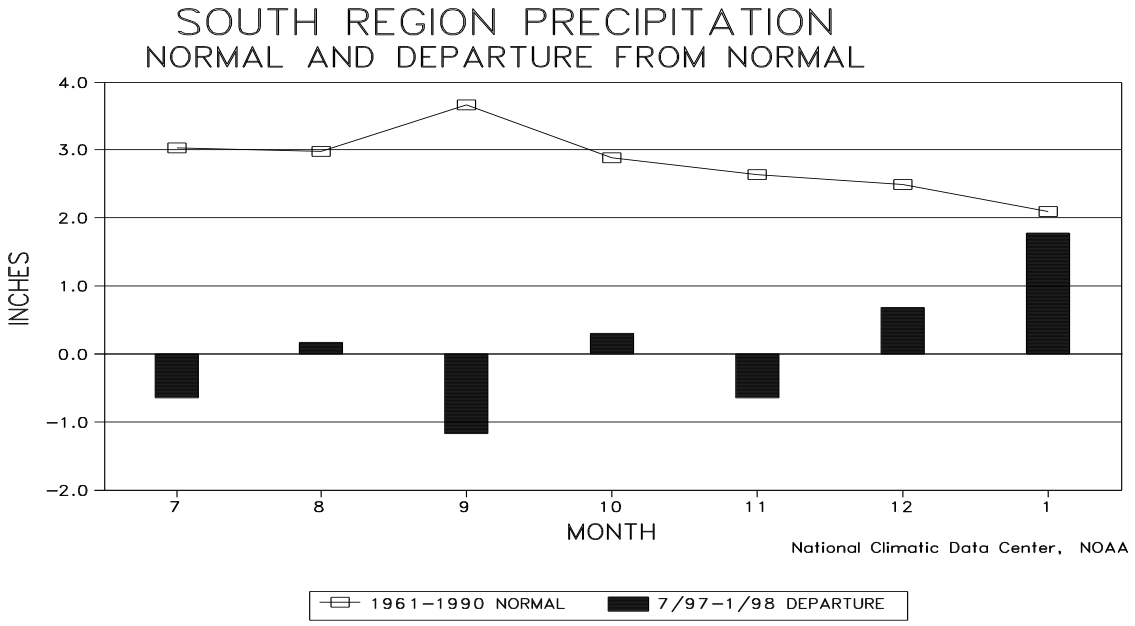


Figure 10: Preliminary data indicate that four of the last seven months have been wetter than normal for the South Region including January precipitation nearly two inches above normal, an anomaly indicative of El Nino.

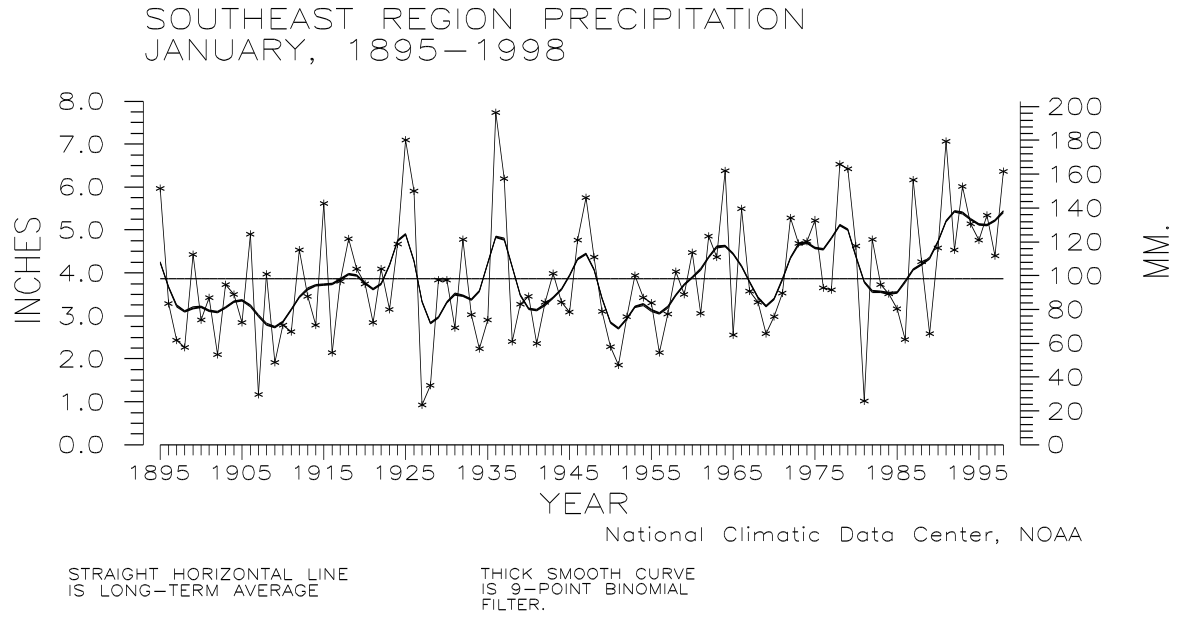


Figure 11: Preliminary data indicate that January 1998 was the seventh wettest such month since records began for the Southeast region. The last nine such months have been above- to much-above the long-term mean. The Southeast region includes Alabama, Georgia, Florida, North Carolina, South Carolina, and Virginia.

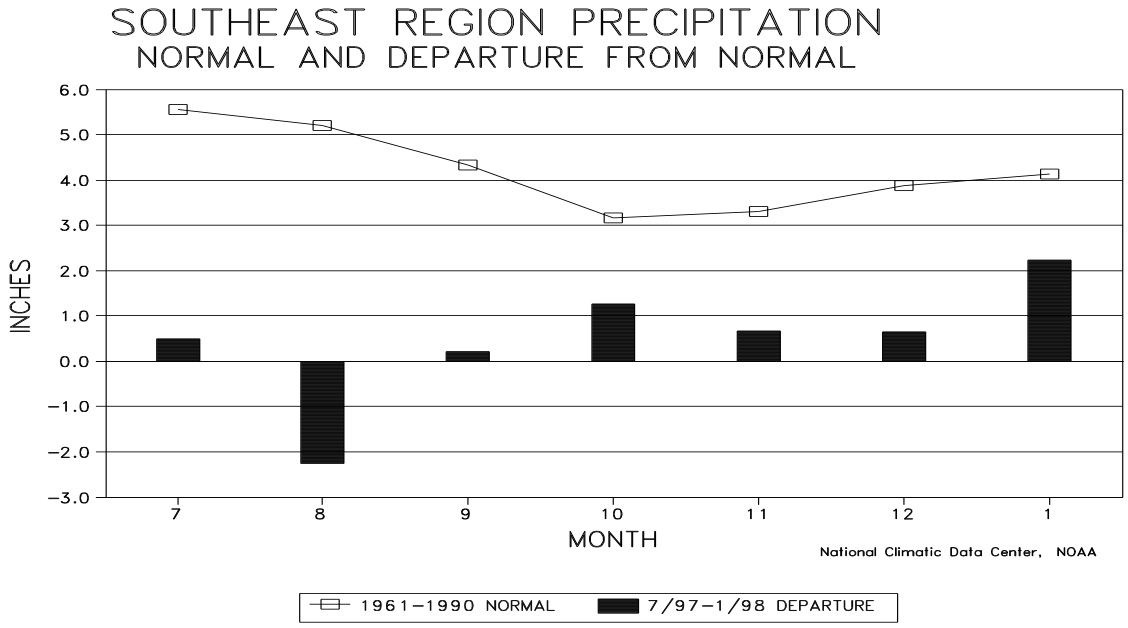


Figure 12. Preliminary data indicate that six of the last seven months have been wetter than normal for the Southeast region. January 1998 had 154% of the normal monthly precipitation. Storm systems forming or strengthening in the northern Gulf of Mexico provided abundant moisture as they moved northeastward up the Atlantic coast. Recent research shows that this storm track is enhanced during an El Nino episode.

JANUARY 1998 STATEWIDE RANKS

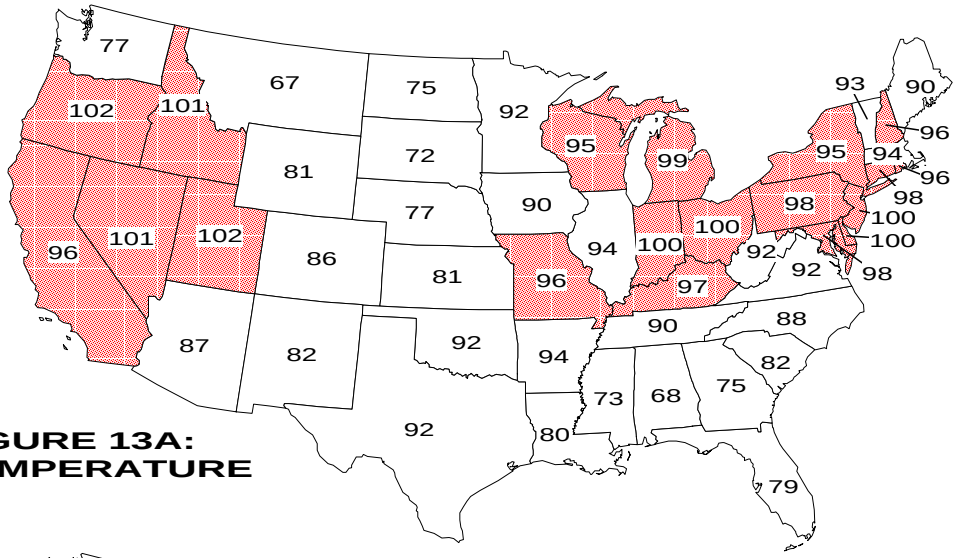


FIGURE 13A: TEMPERATURE

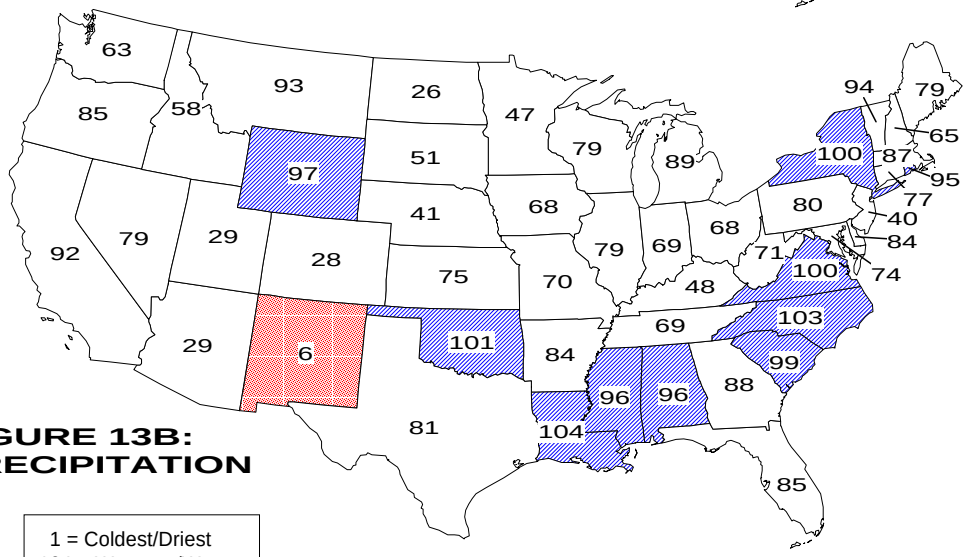


FIGURE 13B: PRECIPITATION

1 = Coldest/Driest
104 = Warmest/Wettest

National Climatic Data Center, NOAA

Temperature and Precipitation Ranks for the contiguous United States. Each state is ranked based on its data from 1895-1998. States having a rank of top ten coldest or driest (rank 1-10) or top ten warmest or wettest (rank 95-104) are shaded.

SSMI MEAN TEMP. ANOMALY IN CELSIUS JAN. 1998
(SNOW COVER WITHIN OR NORTH OF 10% CONTOUR)

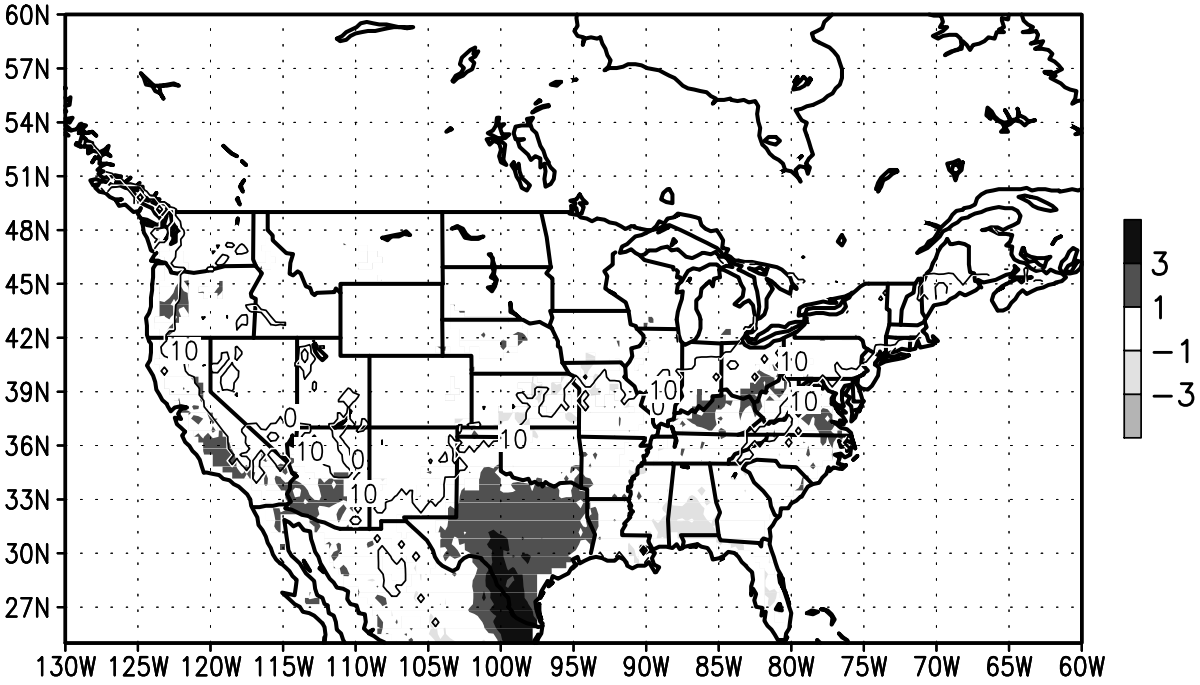


Figure 14

SNOW COVER ANOMALY (%) JAN. 1998

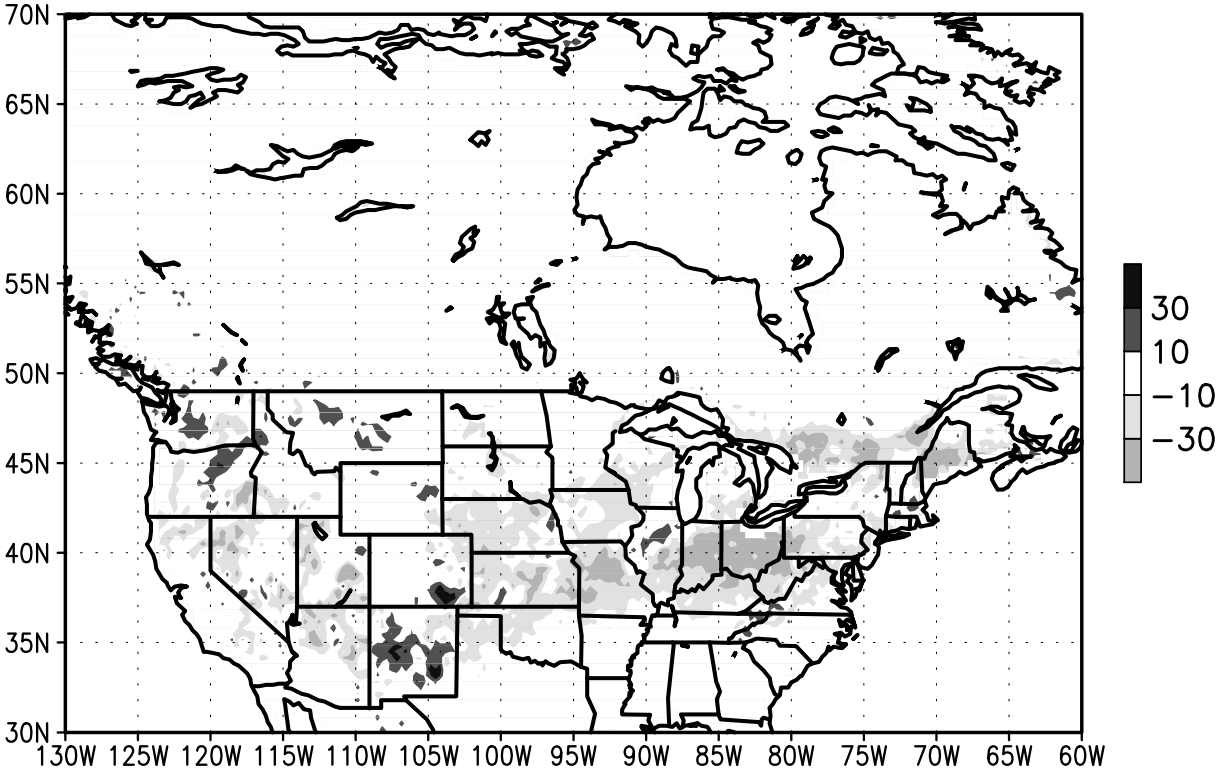


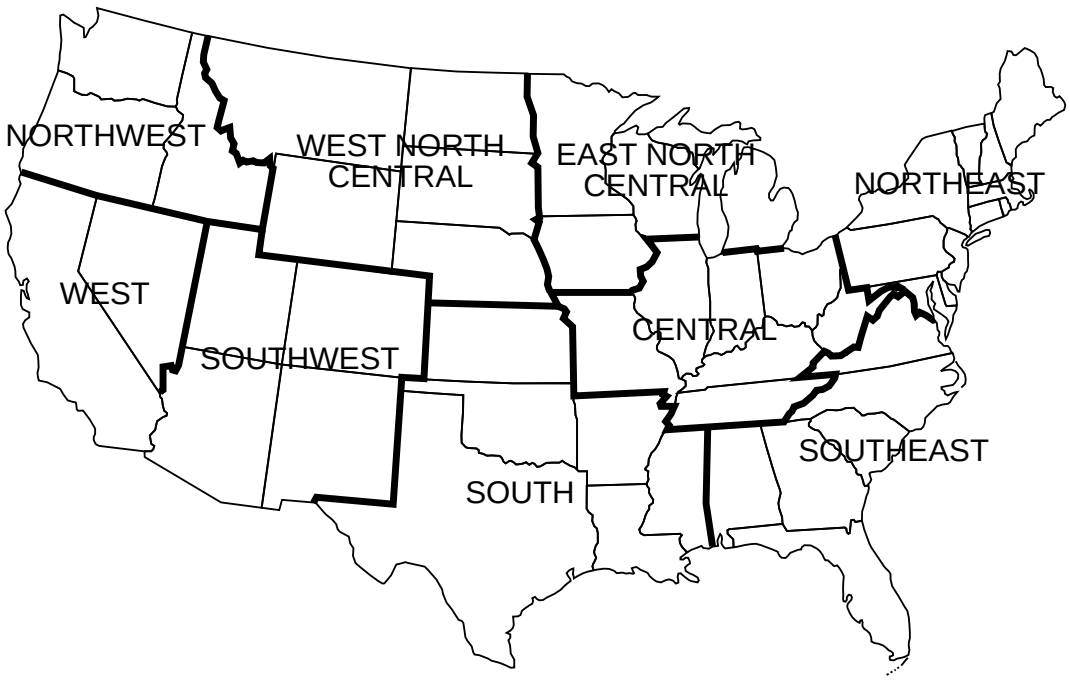
Figure 15

Figure 13A shows, in illustrative map form, the January 1998 statewide temperature ranks. Nineteen states ranked within the top-ten warm portion of the historical distribution while an additional 27 ranked within the warm third. It was the third warmest January on record for Oregon and Utah and the fourth warmest January since 1895 for Idaho and Nevada. It was the fifth warmest January on record for Delaware, Indiana, New Jersey, and Ohio. No state was ranked in the cold half of the distribution.

Figure 13B shows the January 1998 statewide precipitation ranks. Ten states ranked within the top-ten wet portion of the distribution including the wettest January on record for Louisiana. It was the second wettest January on record for North Carolina, the fourth wettest January since 1895 for Oklahoma, and the fifth wettest January since 1895 for New York and Virginia. Twenty-three other states ranked within the wet-third portion of the distribution. It was the sixth driest January on record for New Mexico, the only state within the top-ten dry portion of the distribution. Four other states ranked within the dry third portion of the distribution. **It should be noted that these January state categorical precipitation ranks are preliminary and should be used with considerable caution due to the high variability of precipitation on a small space and time scale.**

Figure 14 shows the mean monthly temperature anomalies for the month of January 1998. The base period is seven years (1992-98). This experimental product is derived from the Special Sensor Microwave Imager (SSMI), an instrument flown on a polar orbiting satellite of the defense meteorological satellite program. The anomalies are in degrees Celsius. Above normal temperatures cover parts of Oregon, California, Arizona, Texas, and adjacent Mexico as well as portions of the Ohio valley and mid-Atlantic region. Below normal temperatures are noted along the central Gulf Coast region. Due to snow cover, the satellite is unable to identify temperature anomalies are over a good portion of the country in January. This area includes New England, extending southwestward through the central Appalachians and from the southern Great Lakes to the central Plains. Also, most of the western highlands had snow cover during the month. This area is displayed on the map as being within or north of the 10% contour. Both the full and anomalous temperature fields can be observed for North America and the globe on the web at: http:\\www.ncdc.noaa.gov\plwebapps\plsql\ssmimain.

Figure 15 shows the mean monthly snow cover anomalies for January 1998. Values represent the deviation from average (base period 1992-1998) snow cover and the anomaly is denoted as a percentage difference from that monthly average. This product is derived from the SSMI. Much of the central Plains, Ohio valley, mid-Atlantic, and Northeast had below normal snow cover during January while portions of southeastern Colorado, central New Mexico, central Illinois, and portions of the intermountain west had above normal snow cover. The full and anomalous snow cover fields can be observed for North America and the globe on the web at: http:\\www.ncdc.noaa.gov\plwebapps\plsql\ssmimain.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